

FIG. 1

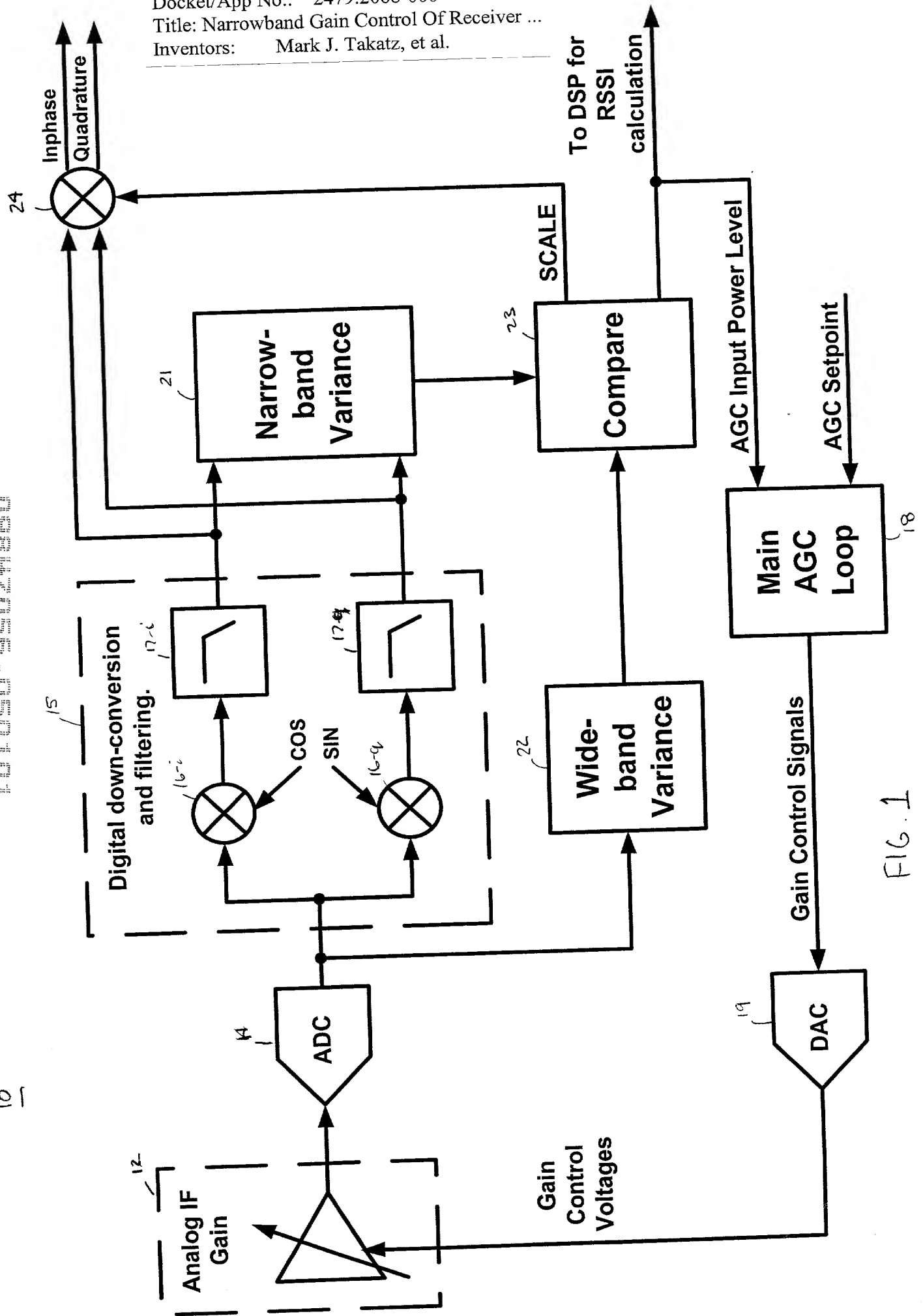


FIG. 1

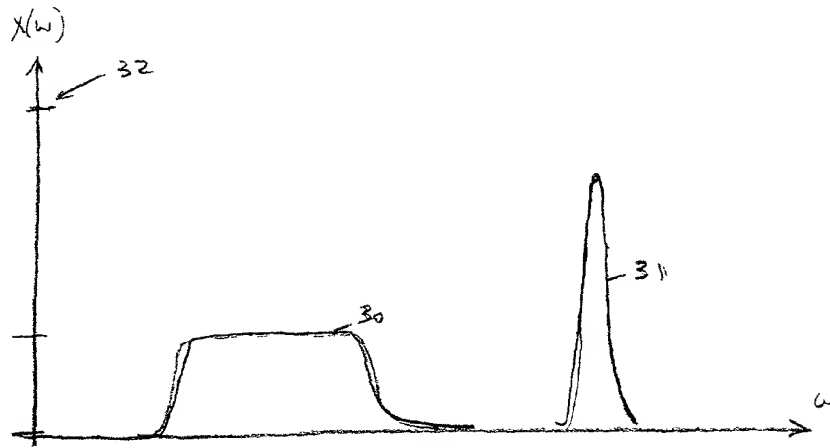


FIG. 2

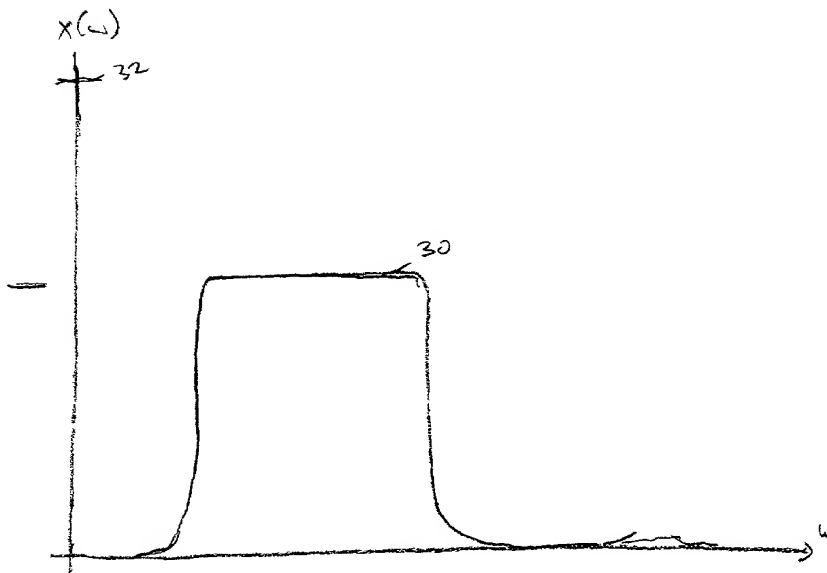


FIG. 3

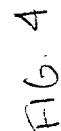
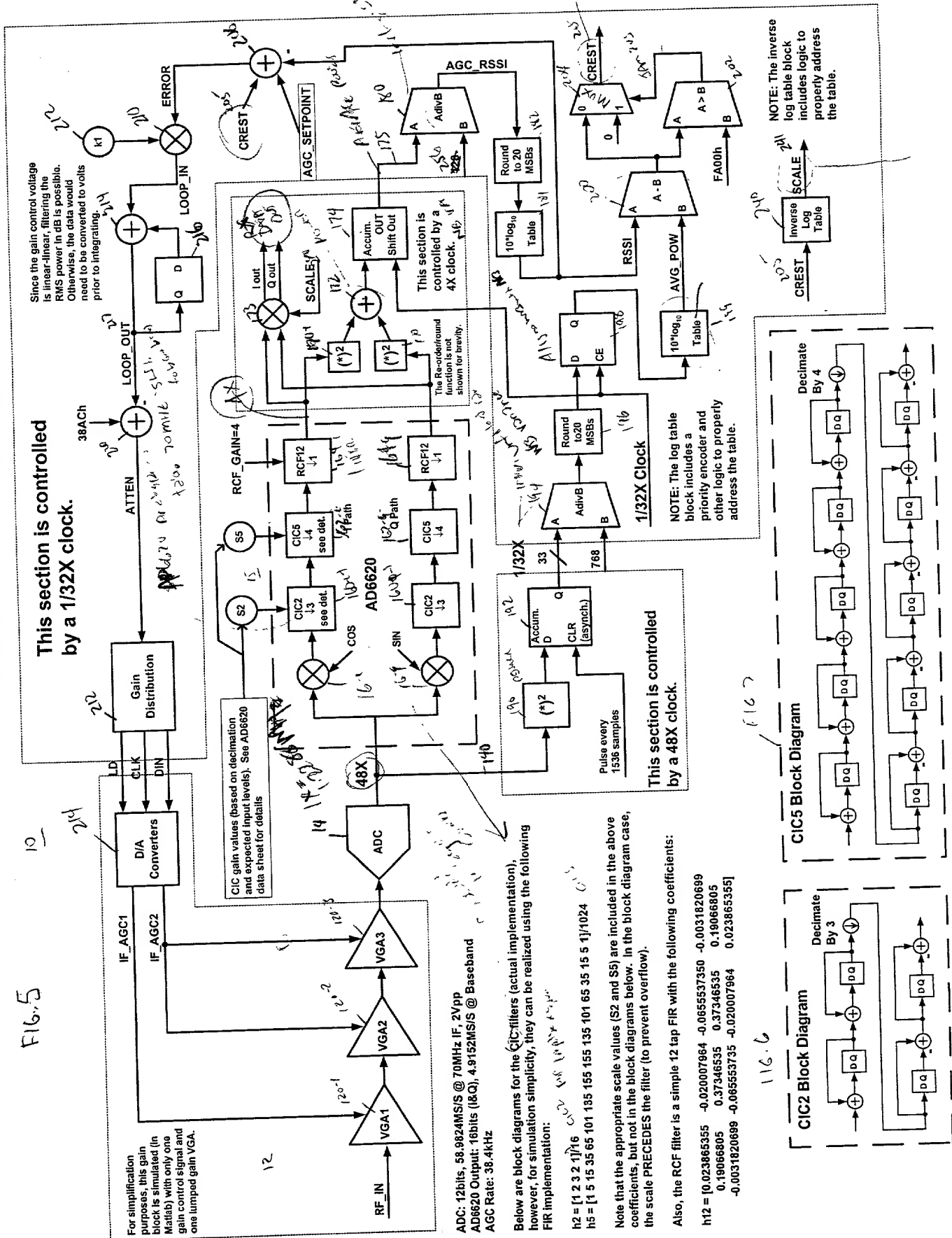


FIG. 4

Inventors: Mark J. Takatz, et al.

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Below are block diagrams for the CIC filters (actual implementation), however, for simulation simplicity, they can be realized using the following FIR implementation:

$$h_2 = [1 \ 2 \ 3 \ 2 \ 1] \cdot 16$$

$$h_3 = [1 \ 15 \ 35 \ 65 \ 101 \ 135 \ 155 \ 155 \ 135 \ 101 \ 65 \ 35 \ 15 \ 5 \ 1] \cdot 1024$$

Note that the appropriate scale values (S2 and S3) are included in the above coefficients, but not in the block diagrams below. In the block diagram case, we precede the filter (to prevent overflow).

11. The coefficients of the 12 tan FIR with the following coefficients:

$$h12 = [0.023865355 \quad -0.020007964 \quad -0.0655537350 \quad -0.0031820699 \\ 0.19066805 \quad 0.37346535 \quad 0.37346535 \quad 0.19066805 \\ 0.023865355 \quad -0.020007964 \quad -0.065553735 \quad -0.0031820699]$$

116.6

### circ Block Diagram

### CIC5 Block Diagram

Decimate

log table block  
includes logic to